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# United States Department of the Interior

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Reply To: 5313.2800hx  
File Name: workPlan11comments.wpd  
TS Number: 03-2923

June 10, 2003

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U.S. Environmental Protection Agency  
Region 10  
1200 Sixth Ave, M/S ECL-115  
Seattle, Washington 98104

Chip Humphrey  
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Region 10  
811 SW 6<sup>th</sup> Avenue, 3<sup>rd</sup> Floor  
Portland, Oregon 97204



Dear Ms. Martich and Mr. Humphrey:

The U.S. Fish and Wildlife Service (Service) appreciates the opportunity to comment on the draft, revised *Portland Harbor RI/FS Programmatic Work Plan*. We offer the following comments on the Work Plan, which pertain primarily to Appendix C (the Ecological Risk Approach).

Page 3, bulleted list at bottom: This list should include gathering site-specific ecological or natural history information on the selected receptors to be used in the risk assessment to provide a better representation of receptor use and risk. Literature values taken from the *Wildlife Exposures Handbook* may not be as appropriate as site-specific values. Site-specific data should be obtained on foraging habits, home range, habitat use, identification of breeding areas and focus use areas, energy budgets, trophic feeding status, etc. At the very least, all receptor-specific parameters that will be used to derive a risk assessment should be discussed with the Lower Willamette Group (LWG), the U.S. Environmental Protection Agency (EPA), and the Trustees prior to completing the Baseline Ecological Risk Assessment (BERA). Any additional information on how a receptor uses a site should be gathered during the next sampling phases.

Page 5, Section 1.5, and Pages 6 to 7, section 1.6: Moving from conservative assumptions to more realistic and accurate site-specific assumptions, as proposed in the text for assessing risk,

requires site-specific information on receptors for many parameters. Because of the mathematical importance or “weight” of the site use factor based on its placement in the risk equation, literature-based values are not as appropriate as site-specific values for a particular receptor. Therefore, site-specific values should be obtained by the LWG, and any proposed reduction from 100% site use should be based on site-specific data gathered by the LWG.

Page 14, section 2.1.3.2. Measures of Ecological Effects. The population-level measures and community-level measures are not adequately defined in this section. What makes up a population or community within the Initial Study Area (ISA)? More information is needed here regarding what level is being protected using the proposed approach. For example, it is unclear how populations or communities of sculpin or other resident fish within the ISA will be protected, and how risk will be assessed. This needs to be specifically described before calculating risk.

Page 19, second paragraph: This section states that *Corophium* are one of the organisms that “dominate” the epibenthic community. Results from the SPI analysis indicate that *Corophium* only inhabit the lower section of the river at the lower end of the ISA. This discrepancy should be clarified, and the text should state specifically where *Corophium* are present in the ISA. *Corophium* are very important prey item to juvenile salmonids, and have been shown to be a means of transfer of PCBs and PAHs to these fish. This pathway should be discussed and evaluated for salmonids if *Corophium* are present. In addition, *Corophium* should be sampled for contaminants if they are abundant. This is possible, and has been done by our office and by the NOAA Science Center, even though effort may be required to get a large sample mass.

Page 31, second to last paragraph: The text refers to Oregon chub and it should be noted that this species is federally classified as endangered. The LWG should clarify if they believe this chub could be present in the ISA. Also, on page 35 it should be noted that bull trout is federally classified as threatened. Information about the Oregon chub and bull trout can be found on our web site at <http://oregonfwo.fws.gov/EndSpp/FactSheets/FishSpecies.dwt>.

Page 38, Section 2.3.3.2. This discussion referring to “diving” ducks is not correct and should be changed or the term should not be used. The terms “diving” and “dabbling” have specific meanings in wildlife biology, and these terms should be used correctly and consistently in the Work Plan. “Diving” and “dabbling” ducks refer to specific groups of ducks distinguished by physical attributes, such as leg placement on the body and degree or type of webbing on their feet, which result in differences in feeding behavior. The importance of making the distinction between the two types has ramifications on risk assessment because these ducks forage differently, therefore, the terms should be described correctly in the context of the risk assessment. Waterfowl in the genus *Anas*, which includes teal, are considered dabbling ducks, meaning they do not dive to gather food. Section 2.3.3.2 should reflect this classification. Teal are primarily herbivores but they will consume small amounts of invertebrates. Also contrary to what is stated in this section of the Work Plan, the wood duck is not a diving duck (or a dabbling duck), but is in a separate tribe (Cairinini) and is considered a perching duck. References to “diving” in this section are not used appropriately and should be changed.

Page 42, second paragraph: It should be noted that nutria were introduced into this area and are considered a nuisance species.

Page 55, section 2.5.5.4: The third sentence should be changed to “The bald eagle is listed as a threatened species under the ESA and is also protected by the Bald Eagle Protection Act, and both the osprey and bald eagle are protected under the Migratory Bird Treaty Act.”

Page 61, last paragraph under “Piscivore.” The sediment ingestion pathway for bald eagle and osprey should be considered complete and major because this pathway can be quantified and these species will consume sediment while eating carcasses on the beach or by eating fish such as sucker, which contain sediment in the stomach. The presence of sediment in the stomach contents of sucker was confirmed by the LWG based on sucker collected and analyzed from the ISA.

Page 62, section 2.6.2.2. Sediment ingestion should be complete and major for mink and should be quantified in the risk assessment. Like eagles, mink and river otter will consume their prey on beaches or in nearshore habitats. Mink and otter also will forage, burrow, or dig into the sediment and then will consume sediment while grooming their fur. These animals groom frequently because they depend on an highly maintained pelage for survival.

Page 64, Section 3.4, Tissue Data. The last paragraph states that “Uncertainties are associated with QA/QC in all tissue studies.” How was this determined? Two authors that we questioned who conducted tissue studies in or near the ISA were never contacted by the LWG.

Page 67, Section 4.0. Category 2 data, as well as Category 1 data, should be used to refine the COPC selection process. Also, this section indicates that “knowledge of receptor foraging characteristics” is known or will be obtained. Site-specific information should be gathered on foraging characteristics.

Page 74, Assessment Endpoint for benthic invertebrates. Clams should be collected for chemical analyses and the results should be used in this assessment.

Page 77, second paragraph under Assessment Endpoint 3: It is unclear what is meant by the statement “For identified bioaccumulative COPCs, chemical concentration in whole body tissues of the representative species for each feeding guild will be analyzed to determine exposure concentrations.” Additional information should be added for clarity.

Page 80, Assessment Endpoint 4. The exposure estimates for amphibians need to be quantitated, not just qualitatively evaluated. Egg masses are present and exposed to chemicals in the ISA, and data exist for some chemicals that can be used in an amphibian risk assessment. Therefore, the egg mass/chemical pathway should be quantitated and the related equations should be presented in the document.

Page 81, Exposure Dose equation: The placement of the site use factor (SUF) in the equation

gives too much emphasis on a value that is extremely subjective, yet is the primary factor that determines risk. The degree to which a receptor uses a site is highly variable and dependent on sex, age, breeding status, habitat and prey availability, and other factors, and cannot be represented by a single number or estimated “fraction” of time a receptor uses a site. Therefore, unless site-specific data on each receptor are gathered, the SUF should be eliminated from the equation and the receptor should be considered to use the site 100% of the time.

Page 81, last paragraph: Selecting foraging ranges, daily food consumption rates, body weights, etc., from the *Wildlife Exposures Handbook* should be the last resort. The LWG should first attempt to gather site-specific information directly. Then the LWG should rely on literature concerning receptors within or near the ISA, information from experts familiar with receptors in the ISA, reports on similar receptors outside the ISA, data from local publications such as the *Atlas of Oregon Wildlife*, and, lastly, data from the *Wildlife Exposure Handbook*.

Other comments:

Additional *Corbicula* clam samples should be collected and analyzed, especially for PAHs. The Work Plan refers to *Corbicula* being “common” in the ISA, and the infaunal survey found *Corbicula* in a number of locations and demonstrated they could be sampled with enough effort. These samples are important because *Corbicula* have been found in fish stomachs and they are good accumulators of PAHs. The clams may be small and collection may take substantial effort, but at least they are bigger than fingernail clams, which also are important dietary items for water birds and fish.

The current proposal to sample whole surface water is inadequate for the LWG to address some of the parameters in the risk assessment. More appropriate sampling techniques, such as sampling a large volume of water over multiple time periods, or use of passive sampling methods, are required to assess risk from chemicals in water.

We have a number of concerns associated with the calculation of the Exposure Point Concentrations (EPC; see section 5.1). Calculation of a 95% upper confidence interval may not provide the most reliable estimate of the EPC depending on what set of samples is used and what specific area is represented. Other methods such as area weighting or nonparametric techniques may better represent some receptors at the site, and provide a more biologically relevant exposure scenario. Some specific issues related to the EPC that should be discussed and agreed upon by the LWG, the EPA, and the Trustees prior to completion of the Preliminary Risk Evaluation include 1) identification of the specific area of the ISA selected to represent a receptor; 2) selection of the specific sediment samples used to represent a receptor (prior to receiving analytical chemistry results); and 3) selection of the specific method or methods (such as area weighted averages, 95% confidence intervals, or nonparametric methods) used to calculate the EPC for a specific receptor. Method selection would likely be based on the spatial distribution of sediment samples and on how well sediment samples meet parametric statistical assumptions. In addition, it is unclear what statistic will be used to represent the EPC in the BERA. For example, on page 71, the first paragraph states that “In the BERA, a mean concentration . . . will be calculated in addition to the 95% UCL for receptors being assessed at the community or population level. The mean EPC will be used to estimate exposure for the average individual in

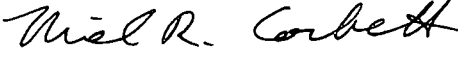
the population or community.” The mean, median, or central tendency measure derived from a normal distribution should not be used as the EPC unless the assumptions of parametric statistics are met, such as random sampling. The basis of the central limit theorem and derivation of a measure of central tendency are dependent on a random distribution; an assumption which will not likely be met based on the proposed sampling plan, so a measure of central tendency could grossly underestimate risk. Therefore, the mean or similar measure of central tendency would likely not be a biological relevant value (it should be noted that the 95% UCL may not be representative either, but would likely be a conservative approach and less likely to underestimate risk, depending on how it is applied). Also, the proposed sampling plan includes biased sampling locations based on suspected contaminated sites. This bias, and how it may influence the results, should be described in the risk assessment.

An approach to evaluate exposure of receptors to dioxin-like compounds (dioxins, furans, and planar PCBs) needs to be added to the risk assessment. The approach should include a derivation of Toxic Equivalent (TEQ) values based on ecologically relevant Toxic Equivalent Factors (TEFs) from the World Health Organization, and the process should be explained in the risk document.

The rules to select Toxicity Reference Values (TRVs) should be revised and more information is needed describing how TRVs will be used in the risk evaluation. We do not agree with the rules as written in the Work Plan because they prevent field studies, or published hazard assessments that derive threshold levels based on reviews of laboratory and field data, from being used in the assessment. For example, a risk evaluation to represent piscivorous bird exposure to bioaccumulative compounds should be based on the most sensitive endpoint (i.e., reproduction). The bioaccumulative chemicals DDE, PCBs, dioxins, and furans cause mortality or other impacts to the developing embryo or egg at lower levels than would impact adult birds through dietary exposure. Therefore, TRVs and no- or low-effect levels should be selected based on concentrations known or estimated to impact the developing embryo or egg. As currently written, the TRV rules would prevent an evaluation of this type of risk, and piscivorous birds and endangered species would not be protected or represented. In addition, no controlled laboratory study results are available for most endangered species and the surrogate process described by the LWG is inadequate. Therefore, the TRV rules should be revised and selection of TRVs should be discussed with the Trustees prior to conducting the Preliminary Risk Evaluation.

Thank you for the opportunity to comment on the revised Work Plan. Please contact Jeremy Buck (503-231-6179) should you need additional information regarding our comments.

Sincerely,

*for*   
Kemper M. McMaster  
State Supervisor

cc:

Preston Sleeper, Regional Environmental Officer, U.S. Department of the Interior, Portland, Oregon